MILITARY SPECIFICATION SHEET

CABLES, RADIO FREQUENCY, FLEXIBLE COAXIAL,
50 OHMS, M17/210-00001

This specification is approved for use by all Departments
and Agencies of the Department of Defense.

The requirements for acquiring the product described herein shall consist of this specification sheet and the issue of the following specification listed in that issue of the Department of Defense Index of Specifications and Standards (DODISS) specified in the solicitation: MIL-C-17.

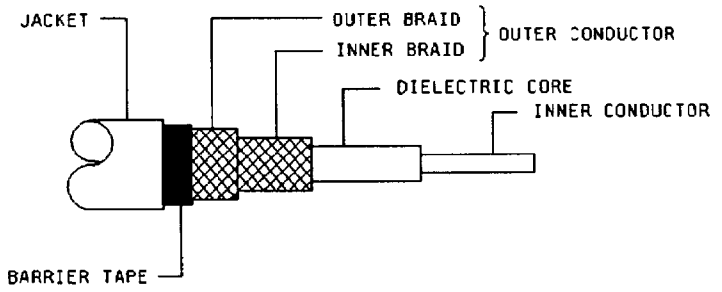

FIGURE 1. Configuration.

TABLE I. Description.

Components	Construction details
Inner conductor	Solid, bare copper wire. Diameter: .195 inch ±.002.
Dielectric core	A-1: Solid polyethylene. Diameter: .680 inch ±.010.

TABLE I. Description - Continued.

Outer conductor	Double braid of AWG#34, silver-coated copper wire. Diameter: .760 inch maximum.
Inner braid	Coverage: 93.5%, nominal Carriers: 48 Ends: 10 Picks/inch: 5.2 ±10%
Outer braid	Coverage: 90.4%, nominal Carriers: 48 Ends: 10 Picks/inch: 4.1 ±10%
Barrier tape	A .001 inch thick polyester tape faced with a .002 inch thick layer of aluminum. The tape will be applied with a 50% lap, minimum. Aluminum face toward the outer conductor. Diameter: .770 inch, maximum.
Jacket	Cross-linked polyolefin. Diameter: .895 inch ±.015.

ENGINEERING INFORMATION:

Continuous working voltage: 8,000 V rms, maximum.

Operating frequency: 5.6 GHz, maximum.

Velocity of propagation: 65.9 percent, nominal.

Power ratings: See figure 2.

Operating temperature range: -40° to +80°C, maximum.

Inner conductor properties:

DC resistance (maximum at +20°C): .0278 ohms per 100 feet.

Elongation: 30 percent, minimum.

Tensile strength: Not applicable.

Engineering notes: This cable is useful in general purpose medium low temperature applications. (See connector series 'N' per MIL-C-39012; 'HN' per MIL-C-3643, and 'LC' per MIL-C-3650). Use this cable for new designs in-lieu-of MIL-C-17/67 cables.

The US Government preferred system of measurement is the metric SI system. However, since this item was originally designed using inch-pound units of measurement, in the event of conflict between the metric and inch-pound, the inch-pound units shall take precedence.

REQUIREMENTS:

Dimensions, configuration, and descriptions: See figure 1 and table I.

Environmental and mechanical:

Visual and mechanical examination: Applicable.

Out-of-roundness: Not applicable.

Eccentricity: 5 percent, maximum.

Adhesion of conductors:

Inner conductor to core: 60 pounds, minimum; 600 pounds, maximum.

Aging stability: +98° ±2°C.

Cold bend: -40° ±2°C.

Stress crack resistance: Not applicable.

Dimensional stability:

Inner conductor from core: .200 inch, maximum.

Inner conductor from jacket: .400 inch, maximum.

Contamination: Not applicable.

Flame propagation: Applicable.

Acid gas generation: 2.0 percent, maximum.

Halogen content: 0.2 percent, maximum.

Immersion test:

Tensile strength, percent of unaged minimum: 50.

Elongation, percent of unaged minimum: 50.

Smoke index: 25 maximum.

Toxicity index: 5 maximum.

Durometer hardness: (Type A) 80 minimum.

Weathering: Applicable.

Abrasion resistance: 75 cycles, minimum (jacket only).

Tear strength: 35 pounds per inch minimum.

Heat distortion: 30 percent maximum distortion.

Physical tests on unaged jacket:

Tensile strength: 1,300 psi. minimum.

Elongation: 160 percent minimum.

Physical tests on aged jacket:

Air oven:

Tensile strength, percent minimum: 60.

Elongation, percent minimum: 60.

Hot oil immersion:

Tensile strength, percent minimum: 50.

Elongation, percent minimum: 50.

Tensile strength and elongation: 1,300 psi, 160 percent minimum.

Weight: 57.2 pounds per 100 feet, maximum.

Electrical:

Spark test: 8,000 V rms, minimum.

Voltage withstanding: 22,000 V rms, minimum.

Insulation resistance: Not applicable.

Corona extinction voltage: 11,000 V rms, minimum.

Characteristic impedance: 50 ohms ±2.

Attenuation: See figure 2.

Structural return loss: See figure 3.

Capacitance: 32.2 pF per foot, maximum.

Capacitance unbalance: Not applicable.

Transmission unbalance: Not applicable.

Mechanically induced noise: Not applicable.

Time delay: Not applicable.

Part or Identifying Number (PIN): M17/210-00001.

CONCLUDING MATERIAL

Custodians:
Army - CR
Navy - EC
Air Force - 85

Review activities:
Army - AR, AT, ME, MI
Navy - AS, MC, OS, SH
Air Force - 11, 19, 80, 99
DLA - ES, IS

Preparing activity:
Navy - EC

Agent:
DLA - ES

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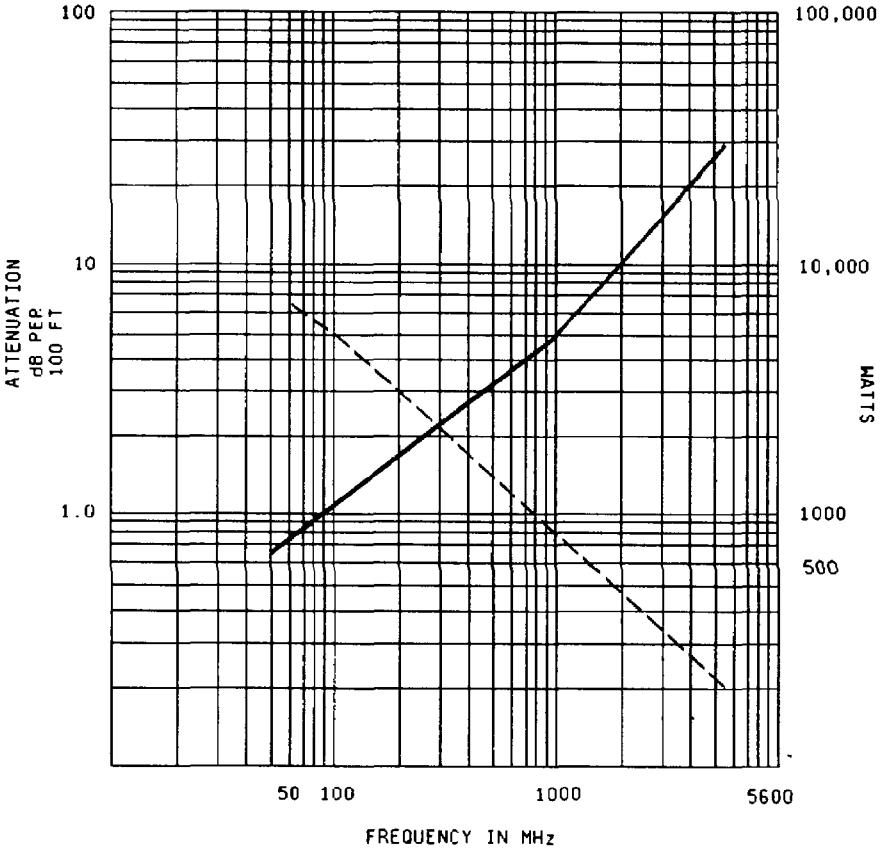

Frequency MHz	Attenuation dB	Power watts
50	.65	6500
100	1.00	5000
1000	5.00	750
5600	28.00	200

Maximum power----------at 25°C sea level
Maximum attenuation----------

FIGURE 2. Power rating and attenuation.

SWR	Reflection coefficient	Return loss dB	SWR	Reflection coefficient	Return loss dB
17.3910	.8913	1	1.3767	.1585	16
8.7242	.7943	2	1.3290	.1413	17
5.8480	.7079	3	1.2880	.1259	18
4.4194	.6310	4	1.2528	.1122	19
3.5698	.5623	5	1.2222	.1000	20
3.0095	.5012	6	1.1957	.0891	21
2.6146	.4467	7	1.1726	.0794	22
2.3229	.3981	8	1.1524	.0708	23
2.0999	.3548	9	1.1347	.0631	24
1.9250	.3162	10	1.1192	.0562	25
1.7849	.2818	11	1.1055	.0501	26
1.6709	.2512	12	1.0935	.0447	27
1.5769	.2239	13	1.0829	.0398	28
1.4985	.1995	14	1.0736	.0355	29
1.4326	.1778	15	1.0653	.0316	30

Frequency MHz	Min SRL
50	10
400	10
1000	10
2000	10
5600	10

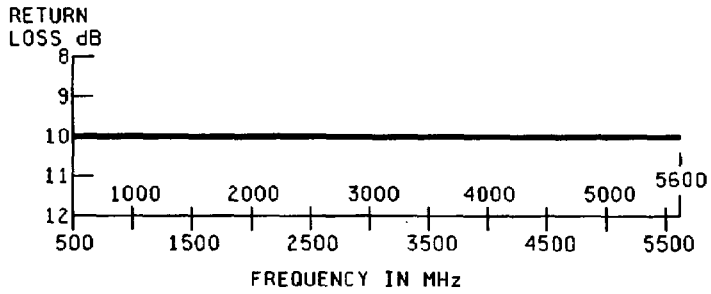

FIGURE 3. Structural return loss.